

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of)
)
Request By Bridgewave Communications, Inc.) WT Docket No. 11-25
For Waiver To Aggregate Contiguous Channels)
Over A Single Carrier in the 18 GHz Band)

REPLY COMMENTS OF MOTOROLA SOLUTIONS, INC.

Motorola Solutions, Inc. (“MSI”) submits these reply comments concerning the above-captioned waiver request submitted by Bridgewave Communications, Inc. (“Bridgewave”).¹ As further discussed below, MSI recommends that the Commission consider this request in its comprehensive review that was initiated in part to provide more flexible deployment options for wireless backhaul links.²

As part of its full portfolio of mission-critical products for government and enterprise organizations, MSI provides point-to-point microwave equipment capable of operating in the 18 GHz band. Thus, MSI is interested in issues that potentially affect the availability of this spectrum for its customers.

Bridgewave seeks a blanket waiver to authorize users of its equipment to aggregate up to 150 MHz for operation over a single carrier in the 17.7-19.7 GHz band

¹ Wireless Telecommunications Bureau Seeks Comment on Request by Bridgewave Communications, Inc. for Waiver to Aggregate Contiguous Channels Over a Single Carrier in the 18 GHz Band, WT Docket No. 11-25, *Public Notice*, DA 11-401 (rel. March 1, 2011) (“Bridgewave Public Notice”). *See also* Request for Waiver of to Permit Channel Aggregation by Non-MVPD Users of the 18 GHz Band, Bridgewave Communications, Inc., WT Docket No. 11-25. (filed May 12, 2010) (“Bridgewave Waiver Request”).

² See Amendment of Part 101 of the Commission’s Rules to Facilitate the Use of Microwave for Wireless Backhaul and Other Uses and to Provide Additional Flexibility to Broadcast Auxiliary Service and Operational Fixed Microwave Licensees, WT Docket Nos. 10-153, 09-109, 07-121, *Notice of Proposed Rulemaking and Notice of Inquiry*, 25 FCC Rcd 11246 (2010) (“*Wireless Backhaul NPRM*”).

(“18 GHz”) band.³ Section 101.147(r) of the Commission’s rules currently limits maximum channel bandwidth in the 18 GHz band to 80 megahertz per channel.⁴ Bridgewave contends that this maximum channel bandwidth is less than what is required to sustain its “multi-gigabit capacity backhaul solution.”⁵ Bridgewave therefore requests that users of its technology be allowed to aggregate three contiguous 50 megahertz channels to create a single 150 megahertz channel that can be transmitted on a single RF carrier.⁶ In support of its request, Bridgewave states that it voluntarily agrees to the following conditions in advance:

- (a) Bridgewave shall advise its customers that all operations pursuant to the requested waiver must otherwise comply with the relevant Part 101 technical rules;
- (b) For any Bridgewave 18 GHz radio that is designed and equipped to operate under the requested waiver, Bridgewave shall include sufficiently detailed installation instructions and guidelines to ensure that users of those radios are informed of the terms and conditions of the waiver and their obligations thereunder; and
- (c) Bridgewave’s customers will be advised that any operations under the requested waiver will be subject to any action the Commission may take in its post-National Broadband Plan Part 101 rulemaking (or any other similar proceeding) that affects channel aggregation in the 18 GHz band.⁷

Six parties, including Bridgewave, filed comments responding to the Commission’s Public Notice. Particularly notable are the comments filed by the Fixed Wireless Communications Coalition (“FWCC”) and XO Holdings, Inc. (“XO”).⁸ FWCC

³ Bridgewave Public Notice at 1-2; Bridgewave Waiver Request at 1.

⁴ See 47 C.F.R. § 101.147(r).

⁵ Bridgewave Waiver Request at 3.

⁶ *Id.*

⁷ *Id.* at 5-6.

⁸ See Comments of Fixed Wireless Communications Coalition, WT Docket No. 11-25 (filed Mar. 15, 2011) (“FWCC Comments”); Comments of XO Holdings, Inc., WT Docket No. 11-25 (filed Mar. 15, 2011) (“XO Comments”).

states that it is not opposed to Bridgewave's request for users to aggregate up to 150 MHz of channel bandwidth but that it is "concerned with spectrum efficiency in the band."⁹ To address its concerns, FWCC recommends three additional conditions to supplement those proposed by Bridgewave:

- Systems operating on two or more aggregated channels must maintain a bandwidth efficiency of at least 6 bps/Hz over the occupied band;
- The modulated carrier must occupy the entire aggregated channel; and
- Systems operating on aggregated channels must comply with the same emission mask requirements (at the edges of the aggregated band) that are currently applicable to single channels.¹⁰

In its comments, XO urges the Commission to "address Bridgewave's rechannelization proposal as part of its comprehensive look at spectrum used for wireless backhaul and in a rulemaking proceeding, rather than as a request for waiver."¹¹ XO states that the Commission's 18 GHz channelization rule would be "eviscerated" if the Commission permits users of Bridgewave's radios to aggregate channels as requested because the same relief inevitably would be available to all similarly situated applicants.¹²

MSI agrees with XO. The FCC adopts rules in part to ensure the efficient distribution of licenses to eligible users. The bandwidth restrictions of Section 101.147(r) are not only intended to enable certain data transmission rates, they are also intended to ensure that adequate capacity in the band is available for multiple users. This purpose of the existing rule would be undermined by a broad rule waiver that would increase the

⁹ FWCC Comments at 1.

¹⁰ *Id.* at 2.

¹¹ XO Comments at 2.

¹² *Id.*

amount of spectrum available to all potential applicants for 18 GHz fixed microwave licenses. While this action may prove to be in the public interest, that decision is properly made in a rulemaking proceeding.

MSI believes that the FWCC has recommended well-intended and appropriate conditions on any potential waiver grant, whether considered under the Bridgewave blanket request or any case-specific application that might be filed in the future. In particular, MSI agrees that requiring an efficiency requirement, such as FWCC's recommendation of 6 bits per second per Hertz, would be an appropriate condition for systems that aggregate 150 MHz of spectrum into a single channel. However, given the potentially broad applicability of the standards recommended by FWCC, MSI believes that such specifics should be established in a rulemaking proceeding where the performance and cost tradeoffs can be better assessed and balanced.

Also, the Commission should first conclude its current proceeding proposing to allow the use of adaptive modulation techniques before it considers its applicability in this waiver context.¹³ While MSI supports the use of adaptive modulation technology in the fixed services, the record in the aforementioned proceeding has raised some implementation questions that should be resolved prior to promoting the technology's use in this waiver context.¹⁴

¹³ See *Wireless Backhaul NPRM*, 25 FCC Rcd at 11258-61 (2010); see also, Wireless Telecommunications Bureau Seeks Comment on Request of Alcatel-Lucent, et al. for Interpretation of 47 C.F.R. § 101.141(a)(3) to Permit the Use of Adaptive Modulation Systems, WT Docket No. 09-106, Public Notice, 24 FCC Rcd 8549 (2009).

¹⁴ See e.g., Comments of Fixed Wireless Communications Coalition, WT Docket Nos. 10-153, 09-106, 07-121 (filed Oct. 25, 2010); Comments of Motorola, Inc., WT Docket Nos. 10-153, 09-106, 07-121 (filed Oct. 25, 2010).

The Commission should not entertain arguments that Bridgewave and its customers would be disadvantaged by any regulatory delay due to moving its request into a rulemaking context. Frankly, Bridgewave bears the brunt of responsibility for any such delay. Bridgewave chose not to participate in the Commission's *Wireless Backhaul NPRM* proceeding that was initiated to address precisely this type of issue. More than four months have passed since the comment deadlines in the proceeding have expired and MSI expects that many of the considered issues are now ripe for final resolutions. Bridgewave's channel aggregation proposal could have been part of that package but Bridgewave chose to pursue an approach unique to its own technology rather than an industry-wide solution. The public interest is better served by more thorough consideration of this proposal.

Respectfully submitted,

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